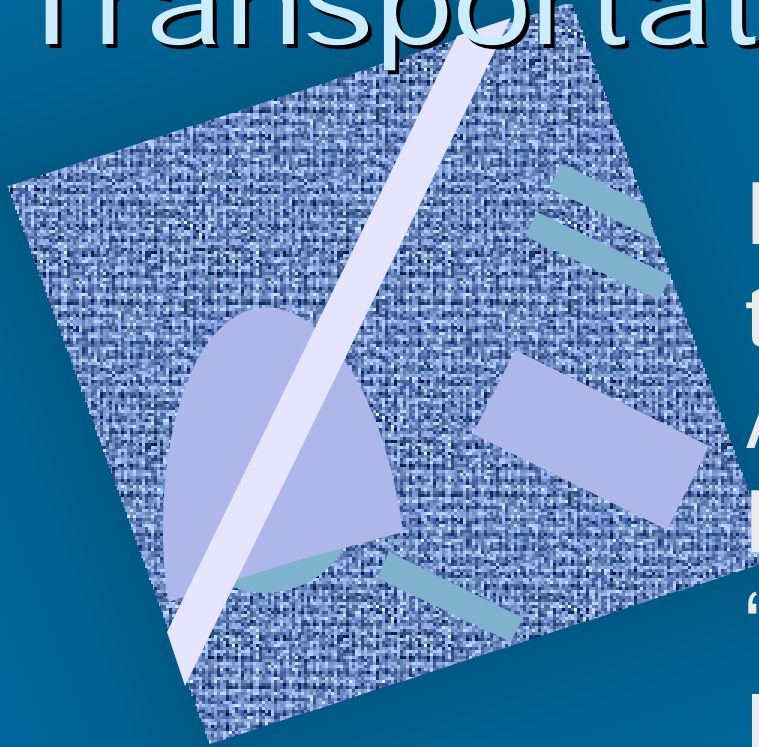


Module 1



Introduction

Advanced Rural Transportation Systems



Rural Challenges and
the Application of
Advanced Technology
Must Be a
“Community”
Investment

Overview of Presentation

Modules

- ① Introduction
- ② Technology Focus Areas and User Needs
- ③ Crash Prevention & Security
- ④ Emergency Services
- ⑤ Traffic Management

Overview of Presentation

Modules (Cont.)

- ⑥ Transit & Mobility
- ⑦ Operations & Maintenance
- ⑧ Travel & Tourism
- ⑨ Surface Transportation Weather
- ⑩ Benefits of Advanced Technologies, How to Get Involved & Funding Opportunities

Module Format

- User Needs
- Stakeholders
- Applicable Technologies
- Projects
- Resources



Rural Situations



- Challenging geography, weather events, and road conditions
- A sparse telecom infrastructure
- Limited public transportation
- NOT one size fits all

Context



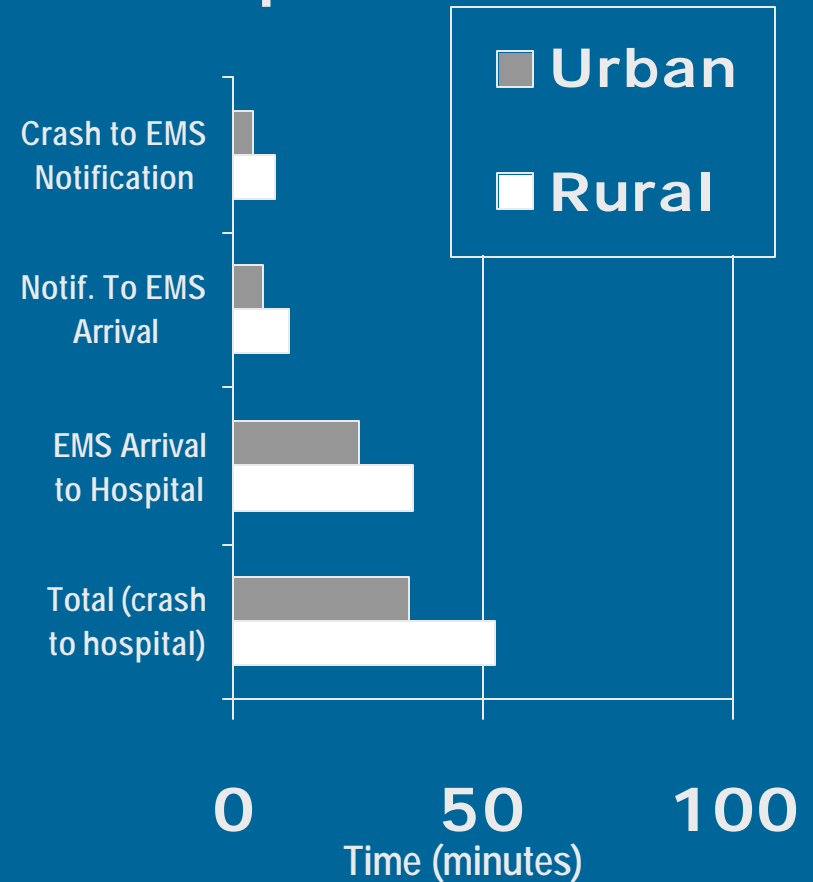
- Limited services between communities
- 78.5% of mileage traveled is rural
- 39.4% of vehicle miles traveled is in rural areas
- 68.4% of crash fatalities occur on rural highways

Source: FHWA Highway Statistics, 1998, Rural Versus Urban Highway Statistics

Crashes



Emergency Response Times



Emergency Response

In Urban and Rural United States

- Nearly 20,000 people die each year before receiving hospital care
- Another 22,000 people die after reaching the hospital too late to be saved



Source: <http://www.nhtsa.dot.gov/cars/problems/studies/acns/champion.htm>

Communications/Power



- Limited cellular communication coverage
- Limited power availability
- Limited E911 service
- Response services potentially volunteer

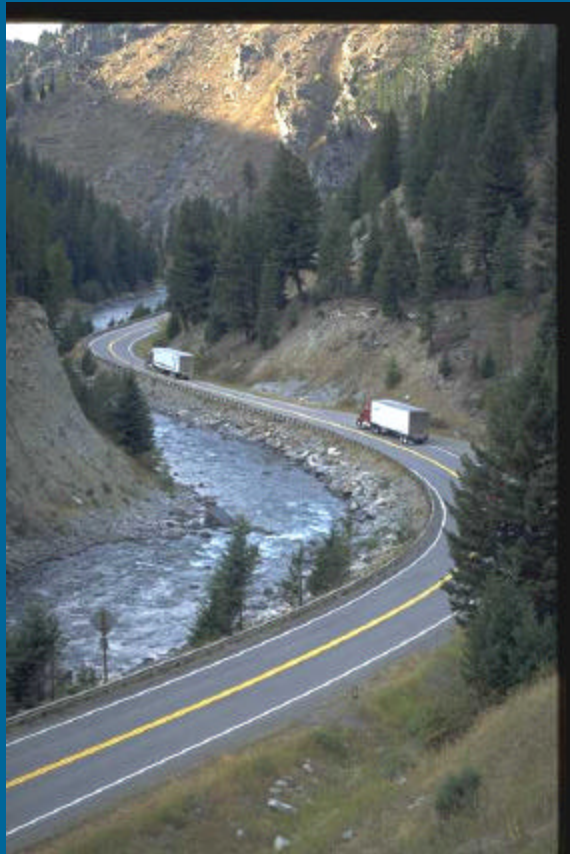
Weather



- 7,000 fatalities annually
- 450,000 persons injured
- \$2 billion spent on snow and ice control

Source: Road Weather Road Show Presentation Paper

Commercial Vehicle Traffic



In 1998:

- 420,000 large trucks were involved in crashes
- 5,302 people died in crashes involving heavy trucks
- 13% of all traffic fatalities reported involved heavy trucks

Source: International Road Dynamics Inc

Commercial Vehicle Rollovers

- 10,000 per year
- 80 deaths
- 3,000 injuries
- Physical damage
- Property loss
- Traffic delays
- Environmental damage



Source: International Road Dynamics Inc

Maintenance



- City and County Responsibility -- 95% unpaved & 55% paved roads
- 95% of rural residents depend on personal vehicles
- Most rural lanes are less than 10 ft in width
- Limited budget and resources

Source: ARTS Strategic Plan

Animal Conflicts

- ~726,000 animal/vehicle crashes each year
- PDO estimates ~\$2000/vehicle, \$1.0 billion each year



Source: Conover, M.R. Wildlife Society Bulletin, 1997

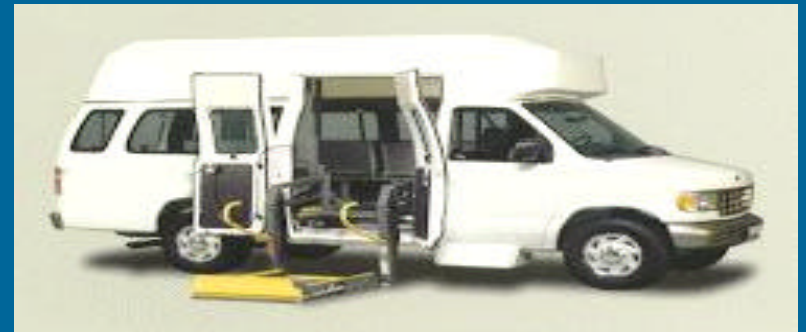
High Recreational Traffic



- Major Route Congestion
- Seasonal Demand
- High Crash Locations
- Limited Visitor Information
- Limited Transit Alternatives
- Limited Infrastructure/Funding
- High Parking Demand/Turn-over

Transit

- 38% of the rural population has no access to public transportation
- 28% have little access
- 45% of rural elderly have no vehicle
- 57% of rural poor have no vehicle
- 1 in 14 households are without a private vehicle



Source: TCRP A - 21, 1999

Economic Viability

- 1998 Travel expenditures -- \$515.2 billion, resulting in 7.6 million jobs
- Domestic travel -- 1.3 billion person trips in 1998
- In 1998, an estimated 46.4 million international visitors spent \$91.3 billion on travel in or to the U.S.

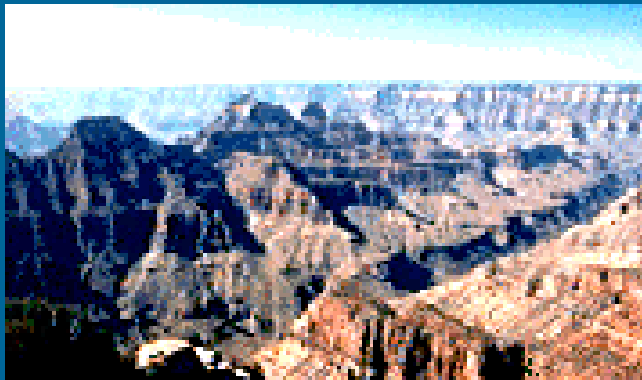


Source: Travel Industry Association of America

State Statistics

1998 Traveler Spending, in billions

- California - \$62.6
- Florida - \$48.1
- New York - \$31.3
- Texas - \$27.6
- Illinois - \$18.4
- Nevada - \$17.6
- Hawaii - \$14.0
- New Jersey - \$13.2
- Pennsylvania - \$13.1
- Georgia - \$12.05



Source: Travel Industry Association of America

Stakeholders

Who are they?

